

CLAIMS

What is claimed is:

1. A digital video service network, comprising:

means for providing a combined digital signal, the combined digital signal having information reflective of a regular program signal and a Banner Information signal;

a receiver for receiving the combined digital signal and a presentation unit for displaying the combined digital signal, the Banner Information being presented to the presentation unit with the regular program; and

a channel communicating the combined digital signal from the means for providing a combined digital signal to the receiver.

2. The network of Claim 1, wherein the means for providing creates a TS packetized combined digital signal.

3. The network of Claim 1, wherein the means for providing a combined digital signal further comprises a first coding unit for coding the regular program signal and a second coding unit for coding the Banner Information signal, a first TS packetization unit for receiving the coded regular program signal and providing a packetized bit stream reflecting the coded regular program signal and a second TS packetization unit for receiving the coded Banner Information signal and providing a packetized bit stream reflecting the coded Banner Information signal, a TS Packet multiplexer for receiving the packetized regular program signal and the packetized Banner Information signal and providing a multiplexed transport stream, and a channel modulation unit for modulating the transport stream into the combined digital signal and sending the combined digital signal for transmission to the channel.

4. The network of Claim 1, wherein the receiver further comprises a channel demodulation unit for demodulating the received combined digital signal and extracting bit streams of the regular program signal and the Banner Information signal from a user-tuned channel, a TS demultiplexing unit for demultiplexing the regular program bitstream and Banner Information TS packets from the signal received from the channel demodulation unit, a Banner Information TS depacketizer for receiving the Banner Information TS packets from the TS demultiplexing unit and depacketizing the Banner Information TS packets to provide a coded Banner Information signal, a Rendering Unit for decoding and rendering the coded Banner Information into a bitmap video signal, a video reconstruction unit for receiving the rendered Banner Information bitmap video signal and creating an output for the presentation device, Audio/Video decoders for receiving the regular program bitstream from the TS demultiplexing unit, the Audio/Video decoders decoding audio and video coded bit streams of the regular program signal, the Audio/Video decoders sending an Audio output signal for transducing into sound and a decoded video signal to the video reconstruction unit, the video reconstruction unit reconstructing an output video signal from the decoded video output and the rendered Banner Information bitmap video signal, the video reconstruction unit sending the video output signal to the video presentation device for display where the regular program and the Banner Information are displayed simultaneously.

5. The network of Claim 1, wherein the receiver further comprises a channel demodulation unit for demodulating the received combined digital signal and extracting bit streams of the regular program signal and the Banner Information signal from a user-tuned channel, and a TS demultiplexing unit for demultiplexing the regular program bitstream and Banner Information TS packets from the signal received from the channel demodulation unit.

6. The network of Claim 5, wherein the receiver further comprises a Banner Information TS depacketizer for receiving the Banner Information TS packets from the TS demultiplexing

unit and depacketizing the Banner Information TS packets to provide a coded Banner Information signal, and a Rendering Unit for decoding and rendering the coded Banner Information into a bitmap video signal.

7. The network of Claim 5, wherein the receiver further comprises Audio/Video decoders for receiving the regular program bitstream from the TS demultiplexing unit, the Audio/Video decoders decoding audio and video coded bit streams of the regular program signal, the Audio/Video decoders sending an Audio output signal for transducing into sound and a decoded video signal to a video reconstruction unit, the video reconstruction unit reconstructing an output video signal from the decoded video output and a rendered Banner Information bitmap video signal, the video reconstruction unit sending the video output signal to the video presentation device for display where the regular program and the Banner Information are displayed simultaneously.

8. A digital video service network, comprising:

means for providing a TS packetized combined digital signal, the combined digital signal having information reflective of a regular program signal and a Banner Information signal, the means for providing a combined digital signal including a first coding unit for coding the regular program signal and a second coding unit for coding the Banner Information signal, a first TS packetization unit for receiving the coded regular program signal and providing a packetized bit stream reflecting the coded regular program signal and a second TS packetization unit for receiving the coded Banner Information signal and providing a packetized bit stream reflecting the coded Banner Information signal, a TS Packet multiplexer for receiving the packetized regular program signal and the packetized Banner Information signal and providing a multiplexed transport stream, and a channel modulation unit for modulating the transport stream into the combined digital signal and sending the combined digital signal for transmission to the channel;

a receiver for receiving the combined digital signal, the receiver including a channel demodulation unit for demodulating the received combined digital signal and extracting bit streams of the regular program signal and the Banner Information signal from a user-tuned channel, a TS demultiplexing unit for demultiplexing the regular program bitstream and Banner Information TS packets from the signal received from the channel demodulation unit, a Banner Information TS depacketizer for receiving the Banner Information TS packets from the TS demultiplexing unit and depacketizing the Banner Information TS packets to provide a coded Banner Information signal, a Rendering Unit for decoding and rendering the coded Banner Information into a bitmap video signal, a video reconstruction unit for receiving the rendered Banner Information bitmap video signal and creating an output for a video presentation device, Audio/Video decoders for receiving the regular program bitstream from the TS demultiplexing unit, the Audio/Video decoders decoding audio and video coded bit streams of the regular program signal, the Audio/Video decoders sending an Audio output signal for transducing into sound and a decoded video signal to the video reconstruction unit, the video reconstruction unit reconstructing an output video signal from the decoded video output and the rendered Banner Information bitmap video signal, the video reconstruction unit sending the video output signal to the video presentation device for display where the regular program and the Banner Information are displayed simultaneously; and

a channel communicating the combined digital signal from the means for providing a combined digital signal to the receiver.

9. A method of providing digital television programming to viewers, the method comprising the steps of:

creating a combined digital television signal which combines information reflective of regular programming and information reflective of Banner Information;

transmitting the combined digital television signal over a channel;

receiving the transmitted, combined digital television signal at a receiver;

10 providing the received, combined digital television signal to a presentation unit such that the information reflective of the regular programming and the information reflective of the Banner Information are displayed simultaneously on the presentation unit.

10. The method of Claim 9, further comprising the step of entering into an agreement with end users which allows for the simultaneous display of the Banner Information and the regular programming on the presentation unit.

11. The method of Claim 9, wherein the agreement provides for a limitation on the subscription charged to the end user.

12. The method of Claim 9, further comprising the steps of: providing a receiver to end user's which receiver specifically enables the simultaneous display of the Banner Information and the regular programming on the presentation unit.

13. The method of Claim 9, further comprising the steps of:

demodulating the received combined digital signal and extracting bit streams of a regular program signal and a Banner Information signal from a user-tuned channel;

demultiplexing the regular program bitstream and Banner Information TS packets from the demodulated signal;

depacketizing the Banner Information TS packets to provide a coded Banner Information signal;

decoding the coded Banner Information; and

rendering the coded Banner Information into a bitmap video signal.

14. The method of Claim 9, further comprising the steps of:

demodulating the received combined digital signal and extracting bit streams of a regular program signal and a Banner Information signal from a user-tuned channel;

demultiplexing the regular program bit stream and Banner Information TS packets from the demodulated signal;

decoding audio and video coded bit streams of the regular program signal;

sending an audio output signal for transducing into sound;

reconstructing an output video signal from the decoded video output and a signal reflective of the Banner Information signal; and

sending the output video signal to the video presentation device for display where the regular program and the Banner Information are displayed simultaneously.

15. The method of Claim 9, wherein the step of creating the combined digital signal further comprises the steps of:

coding a regular program signal and coding a Banner Information signal;

packetizing the coded regular program signal and providing a packetized bit stream reflecting the coded regular program signal;

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packetizing the coded Banner Information signal and providing a packetized bit stream reflecting the coded Banner Information signal;

providing a multiplexed transport stream from the packetized regular program signal and the packetized Banner Information signal; and

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modulating the transport stream into the combined digital signal and sending the combined digital signal for transmission to the channel.

16. A receiver for an interactive digital video service network, the receiver comprising:

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means for receiving a combined digital signal, the combined digital signal having information reflective of a regular program and Banner Information;

means for decoding the combined digital signal and providing a first signal reflective of the regular program and a second signal reflective of the Banner Information;

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means for receiving the signal reflective of the at least one Background Commercial and providing a signal reflective of the Banner Information; and

means for providing a video output signal, the means for providing the video output signal combining information from the signal reflective of the regular program and the signal reflective of the Banner Information.

17. The receiver of Claim 16, further comprising a channel demodulation unit for demodulating the received combined digital signal and extracting bit streams of the regular program signal and the Banner Information signal from a user-tuned channel, a TS demultiplexing unit for demultiplexing the regular program bitstream and Banner Information TS packets from the signal received from the channel demodulation unit, a Banner Information TS depacketizer

for receiving the Banner Information TS packets from the TS demultiplexing unit and depacketizing the Banner Information TS packets to provide a coded Banner Information signal, a Rendering Unit for decoding and rendering the coded Banner Information into a bitmap video signal, a video reconstruction unit for receiving the rendered Banner Information bitmap video signal and creating an output for a video presentation device, Audio/Video decoders for receiving the regular program bitstream from the TS demultiplexing unit, the Audio/Video decoders decoding audio and video coded bit streams of the regular program signal, the Audio/Video decoders sending an Audio output signal for transducing into sound and a decoded video signal to the video reconstruction unit, the video reconstruction unit reconstructing an output video signal from the decoded video output and the rendered Banner Information bitmap video signal, the video reconstruction unit sending the video output signal to the video presentation device for display where the regular program and the Banner Information are displayed simultaneously.

18. The receiver of Claim 16, further comprising a channel demodulation unit for demodulating the received combined digital signal and extracting bit streams of the regular program signal and the Banner Information signal from a user-tuned channel, and a TS demultiplexing unit for demultiplexing the regular program bitstream and Banner Information TS packets from the signal received from the channel demodulation unit.
19. The receiver of Claim 18, further comprising a Banner Information TS depacketizer for receiving the Banner Information TS packets from the TS demultiplexing unit and depacketizing the Banner Information TS packets to provide a coded Banner Information signal, and a Rendering Unit for decoding and rendering the coded Banner Information into a bitmap video signal.
20. The receiver of Claim 18, further comprising Audio/Video decoders for receiving the regular program bitstream from the TS demultiplexing unit, the Audio/Video decoders decoding audio and video coded bit streams of the regular program signal, the Audio/Video decoders

sending an Audio output signal for transducing into sound and a decoded video signal to a video reconstruction unit, the video reconstruction unit reconstructing an output video signal from the decoded video output and a rendered Banner Information bitmap video signal, the video reconstruction unit sending the video output signal to the video presentation device for display where the regular program and the Banner Information are displayed simultaneously.

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